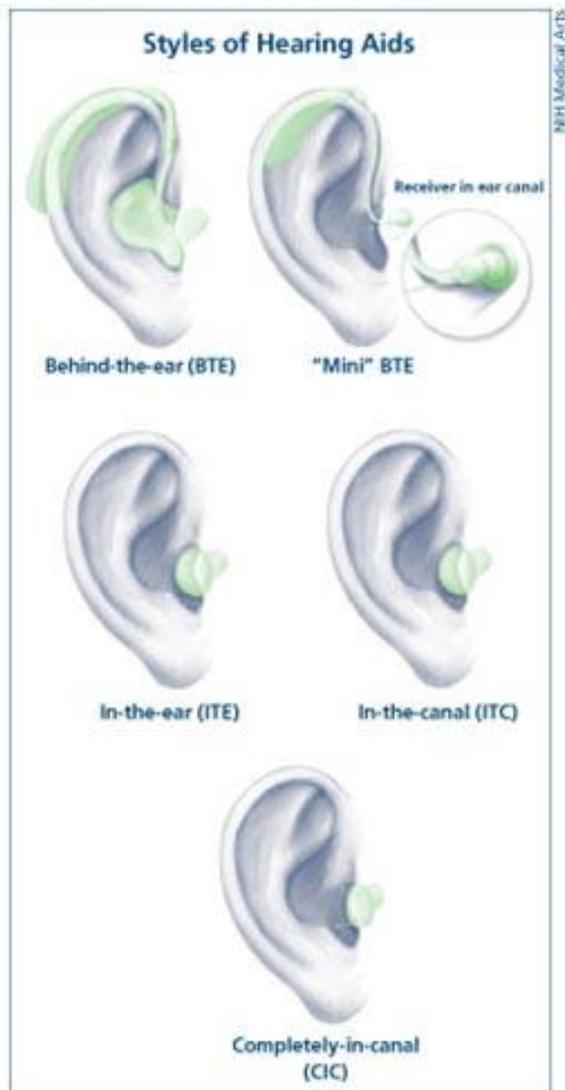


Types of hearing aids

Underlined text: Federal Drug Administration (FDA) = <https://www.fda.gov/medical-devices/hearing-aids/types-hearing-aids>

Regular text: Consumer Reports (CR) = <https://www.consumerreports.org/health/hearing-aids/buying-guide/>

Italic text: Mayo Clinic (Mayo)= <https://www.mayoclinic.org/diseases-conditions/hearing-loss/in-depth/hearing-aids/art-20044116>



Courtesy of NIDCD/NIH

Traditional Behind-the-Ear Hearing Aid (BTE)

FDA: *Behind-the-ear (BTE) aids:* Most parts are contained in a small plastic case that rests behind the ear; the case is connected to an earmold or an earpiece by a piece of clear tubing. This style is often chosen for young children because it can accommodate various earmold types, which need to be replaced as the child grows. Also, the BTE aids are easy to be cleaned and handled, and are relatively sturdy.

CR: In spring 2018 we asked more than 122,000 Consumer Reports members about their experiences with hearing loss and hearing aids. The majority (71 percent) of the hearing aids were mini-behind-the-ear types.

In this group of aids, which sometimes includes RITA hearing aids, all electronic components are in the plastic case worn behind the ear. Sound is sent to the ear through the tubing that connects the case to the receiver and a custom earmold worn in the ear canal.

Pros: Offers flexible features and considerable low- and high-frequency amplification, making it good for those with severe hearing loss. On larger, traditional models, controls

are easy to manipulate and the telecoil mode is easily selected and used. (See below for more information on the telecoil.) The custom-made earmold can be easily cleaned. Accommodates larger batteries for more power. Feedback is rare because of the snug fit.

Cons: Some custom molds are visible. (Clear molds are not.) Vulnerable to sweat and wax buildup, but the tubing and mold are easily cleaned. The earmold must fit snugly and fill the entire ear canal, which can cause a plugged-up feeling.

Mayo: *Behind the ear*

A behind-the-ear (BTE) hearing aid hooks over the top of your ear and rests behind the ear. A tube connects the hearing aid to a custom earpiece called an ear mold that fits in your ear canal. This type is appropriate for people of all ages and those with almost any type of hearing loss.

A behind-the-ear hearing aid:

- *Traditionally has been the largest type of hearing aid, though some newer mini designs are streamlined and barely visible*
- *Has directional microphones*
- *Is capable of more amplification than are other styles*
- *May pick up more wind noise than do other styles*
- *May be available with a rechargeable battery*

Mini-Behind-the-Ear Hearing Aid (mBTE)

FDA: "Mini" BTE (or "on-the-ear") aids: A new type of BTE aid called the mini BTE (or "on-the-ear") aid. It also fits behind/on the ear, but is smaller. A very thin, almost invisible tube is used to connect the aid to the ear canal. Mini BTEs may have a comfortable ear piece for insertion ("open fit"), but may also use a traditional earmold. Mini BTEs allow not only reduced occlusion or "plugged up" sensations in the ear canal, but also increase comfort, reduce feedback and address cosmetic concerns for many users.

CR: This type goes by various names, including receiver-in-the-canal (RIC), receiver-in-the-ear (RITE), receiver-in-the-aid (RITA), and canal receiver technology (CRT). Here, the receiver (the speaker that sends sounds to the inner ear) is inside the ear canal. It attaches to the ear via a thin wire and a custom-made earmold (a piece of soft material

made to fit snugly in the ear and channel sound into the ear), or a noncustom dome-style ear-canal piece.

Pros: Comfortable, barely visible. Prevents a plugged-up feeling (especially when using an open ear tip, which is appropriate if you can hear well in the low pitches). Larger versions are easy to insert.

Cons: Wax and moisture buildup may limit the life of the receiver. Does not allow for significant amplification, especially in the low frequencies.

Traditional In-the-Ear Hearing Aid (ITE)

FDA: *In-the-ear (ITE) aids: All parts of the hearing aid are contained in a shell that fills in the outer part of the ear. The ITE aids are larger than the in-the-canal and completely-in-the-canal aids (see below), and for some people may be easier to handle than smaller aids.*

CR: All electronic components are included within the case, which rests in the bowl of the outer ear.

Pros: Offers more room for features such as telecoil, directional microphone, and wireless streaming. Less of a plugged-up feeling when vented. Relatively easy to insert.

Cons: Some people consider ITE units to be more visible, and the telecoil might not be as powerful as those on BTE hearing aids because it is smaller in size. directional and omnidirectional settings, depending on the environment. Advanced versions can focus behind the listener or to the listener's side. A negative: It's prone to picking up wind noise.

Mayo: *hearing aid is custom made in two styles — one that fills most of the bowl-shaped area of your outer ear (full shell) and one that fills only the lower part (half shell). Both are helpful for people with mild to severe hearing loss and are available with directional microphones (two microphones for better hearing in noise).*

An in-the-ear hearing aid:

- *Includes features that don't fit on smaller style hearing aids, such as a volume control*

- *May be easier to handle*
- *Uses a larger battery for longer battery life, with several options for rechargeable batteries*
- *Is susceptible to earwax clogging the speaker*
- *May pick up more wind noise than do smaller devices*
- *Is more visible in the ear than smaller devices*
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Receiver in canal or receiver in the ear

The receiver-in-canal (RIC) and receiver-in-the-ear (RITE) styles are similar to a behind-the-ear hearing aid with the speaker or receiver that sits in the ear canal. A tiny wire, rather than tubing, connects the piece behind the ear to the speaker or receiver.

A receiver-in-canal hearing aid:

- *Typically has a less visible behind-the-ear portion*
- *Has directional microphones*
- *Has manual control options*
- *May be available with rechargeable battery*
- *Is susceptible to earwax clogging the speaker*

Open fit

An open-fit hearing aid is a variation of the behind-the-ear hearing aid with a thin tube or the receiver-in-the-canal or receiver-in-the-ear hearing aid with an open dome in the ear. This style keeps the ear canal very open, allowing for low-frequency sounds to enter the ear naturally and for high-frequency sounds to be amplified through the hearing aid. This makes the style a good choice for people with better low-frequency hearing and mild to moderate high-frequency hearing loss.

An open-fit hearing aid:

- *Is often visible*
- *Doesn't plug the ear like the in-the-ear hearing aid styles, often making your own voice sound better to you*
- *May be more difficult to insert into the ear due to the noncustom dome*

In-the-Canal Hearing Aid (ITC)

FDA: In-the-canal (ITC) aids and completely-in-the-canal (CIC) aids: These hearing aids are contained in tiny cases that fit partly or completely into the ear canal.

They are the smallest hearing aids available and offer cosmetic and some listening advantages. However, their small size may make them difficult to handle and adjust for some people.

CR: Pros: Barely visible, less of a plugged-up feeling because the aid sits deep in the canal. Larger units can include directional microphones.

Cons: Discomfort is a problem for many, along with the concerns that are typically associated with completely-in-the-canal models. These models are susceptible to moisture, and the receiver is vulnerable to clogging from earwax. The battery tends to be small, so battery life is relatively short. May be challenging to handle and adjust.

Mayo: *In the canal*

An in-the-canal (ITC) hearing aid is custom molded and fits partly in the ear canal. This style can improve mild to moderate hearing loss in adults.

An in-the-canal hearing aid:

- *Is less visible in the ear than larger styles*
- *Includes features that won't fit on completely-in-the-canal aids, but may be difficult to adjust due to its small size*
- *Is susceptible to earwax clogging the speaker*

Completely-in-the-Canal Hearing Aid (CIC)

CR: Pros: Recessed into the ear canal and fits deep and tight in the ear. Minimal feedback when used with a phone. Because it's in the canal, it has low visibility and can be removed with a removal string. Less sensitive to wind noise.

Cons: Too small to include a directional microphone (which reduces background noise by picking up sound from a specific direction) but often has some directional sensitivity. Ear might feel plugged up unless hearing aid is vented. Vulnerable to wax buildup and moisture. It can accommodate only a small battery, so battery life is relatively short.

Because of its small size, the battery can be difficult to insert and remove. The aid may be challenging to handle and adjust.

Mayo: *Completely in the canal (CIC) or mini CIC*

A completely-in-the-canal hearing aid is molded to fit inside your ear canal. It improves mild to moderate hearing loss in adults.

A completely-in-the-canal hearing aid:

- *Is the smallest and least visible type*
- *Is less likely to pick up wind noise*
- *Uses very small batteries, which have shorter life and can be difficult to handle*
- *Often doesn't include extra features, such as volume control or a directional microphone*
- *Is susceptible to earwax clogging the speaker*

CR: **Personal sound amplification product (PSAP)**

- Sound amplification only, i.e., volume control, and no filtering or directionality
- Designed to amplify all the sounds around you within a certain radius, including background noise, wind, and other noises you may not want to hear